MARKED-UP REVISIONS

IN THE SPECIFICATION:

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Currently, a carbon dioxide laser beam is commonly utilized for perforating the hole for connection. However, processing an area of less than 50 μm is hardly feasible because a wave length of the laser beam is approximately 10 μm, which is rather long, so that a spot of the laser beam can hardly be focused. Since residue of resin remains in approximately 1 μm thick after the laser processing, the residue must be removed by such a method as de-smearing. According to the present invention, a YAG (yttrium aluminum garnet) laser having a wave length of 400 to 600 nm is utilized for perforating the hole for connection, so that resin residue can be eliminated in conjunction with focusing a laser spot in an extremely small diameter. In the case of the carbon dioxide laser beam, an absorption ratio of copper to a laser beam is less than 10%, so that [all most all] most of the laser beam [are] is reflected on the surface of the insulative layer and not abrade into the insulative layer. Accordingly, the laser beam generates heat and melts surrounding resin, so that the melted resin remains in film. On the other hand, in the case of the YAG laser beam having the wave length of 400 to 600 nm, an absorption [ration] ratio of copper to the YAG laser beam is from 20 to 55%, copper is abraded properly, so that [such] the resin residue does not remain. Accordingly, the process of de-smearing is not necessary. If a wave length of a laser beam is smaller than 400 nm, an absorption ratio of copper increases and the circuit pattern may be perforated as deep as some μm due to excess abrasion. Therefore, in a case [that] where a thickness of copper becomes thinner in accordance with being a circuit pattern made finer in the near future, a laser processing by using the wave length of less than 400 nm is harmful for copper of a circuit pattern because the copper is shaved too thin.

IN THE CLAIMS:

1. (Amended) A printed circuit board comprising:

a circuit pattern formed on a surface of a base substrate, [of which surface] the surface [is] at least [composed] comprising [of] an insulative material;

an insulative layer formed over the surface of said base substrate and including said circuit pattern, the insulative layer [and composed of] comprising a mixed insulative material of more than two kinds of organic resins having [a] different etching [rate] rates [by] during a dry etching process;

a connection hole [for connection perforated on] perforating said insulative layer [by a laser beam or like];

a conductive film [for electroplating process as a foundation of] forming an electroplating foundation, electroplating formed on the surface of said insulative layer by a vacuum film forming process after roughing the surface of said insulative layer by removing a part of the surface of said insulative layer with a dry etching process; and

a conductive layer formed over said conductive film by an electroplating process,

wherein said conductive layer is connected with said circuit pattern electrically.